

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
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In re Application of:	:	Examiner: Jennifer L. Norton
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Klaus LIETZAU	:	
	:	
For: MULTIVALUE CONTROL SYSTEM	:	
AND METHOD FOR CONTROLLING A	:	
MULTIVALUE CONTROLLED SYSTEM	:	
	:	
	:	Art Unit: 2121
Filed: April 7, 2005	:	
	:	Confirmation No. 6750
Serial No.: 10/530,613	:	
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VIA EFS-WEB

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Signature: Helen Tam
Helen Tam

REPLY BRIEF PURSUANT TO 37 C.F.R. § 41.41

SIR:

This paper is responsive to the “Examiner’s Answer” dated October 6, 2010 in connection with the above-captioned application. For the reasons more fully set forth below and in the “Appeal Brief Pursuant to 37 C.F.R. § 41.37” (“the Appeal Brief”), it is respectfully submitted that the present rejections should be reversed.

I. ARGUMENTS

A. Rejection of Claims 21 to 24, 27 to 29, and 32 Under 35 U.S.C. § 103(a)

Claims 21 to 24, 27 to 29, and 32 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Vos et al. and the Alleged APA.¹ It is respectfully submitted that the combination of Vos et al. and the Alleged APA does not render unpatentable the present claims for at least the following reasons.

¹ While the Final Office Action appears to refer to U.S. Patent Application Publication No. 2006/0004470 (“the ’470 publication”) as “Applicant’s Admitted Prior Art,” the ’470 publication is the publication of the instant application. Thus, the ’470 publication does not itself constitute prior art with respect to the present application.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), the prior art must teach or suggest each element of the claim. *See Northern Telecom, Inc. v. Datapoint Corp.*, 908 F.2d 931, 934 (Fed. Cir. 1990), *cert. denied*, 111 S. Ct. 296 (1990); *In re Bond*, 910 F.2d 831, 834 (Fed. Cir. 1990). In addition, as clearly indicated by the Supreme Court, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. *See KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). Further, the Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. M.P.E.P. §2143.

Claim 21 relates to a multivalued control system, including, *inter alia*, a controlled multivalued system; a plurality of controllers; a plurality of comparators; and a conversion device, input variables of the conversion device corresponding to output variables of the controllers, the conversion device configured to calculate, at least from the output variables of the controllers, the correcting variables, *the conversion device configured to superimpose, on the output variables of the controllers, an input control component that is a function of an actual value to calculate the correcting variables*. Claims 27 and 32 include features analogous to the features included in claim 21.

The combination of Vos et al. and the Alleged APA does not disclose, or even suggest, all of the claimed features of claims 21, 27, and 32. Specifically, Vos et al. does not even refer to a conversion device. Instead, Vos et al. merely describes controllers 66, 68 connected directly to the engine, drivetrain, propeller, and actuators dynamics in Figure 2. Indeed, the Final Office Action at page 5 admits that “Vos does not expressly teach to a conversion device ..., the conversion device configured to superimpose, on the output variable of the controllers (col. 7, lines 2-8 and 10-15), an input control component that is a function of an actual value to calculate the correcting variables (col. 6, lines 1-8 and 13-19).” Although the Final Office Action cites column 6, lines 1 to 8, and 13 to 19, and column 7, lines 2 to 8, and 10 to 15 as reproduced above, these cited sections merely state that the FADEC of Vos et al. receives inputs from various sensors (column 6, lines 1 to 8, and 13 to 19), and outputs control signals to various servos (column 7, lines 2 to 8, and 10 to 15), without any intervening conversion device. Thus, Vos et al. does not disclose, or even suggest, the features of *a conversion device configured to superimpose, on the output variables of the controllers, an input control component that is a function of an actual value to calculate the correcting variables*.

Further, the Alleged APA also does not disclose all of the features included in claims 21, 27, and 32. Nonetheless, the Final Office Action at pages 3 and 4 asserts the following:

Applicant's disclosed limitation of "a conversion device configured to superimpose, on the output variables of the controllers (i.e. the controlled multivalue system having several correcting variables as input variables), an input control component that is a function of an actual value (i.e. a conversion device whose input variables are the output variables made available by the controllers) to calculate the correcting variables (i.e. the conversion device calculating the correcting variables for the controlled multivalue system at least from the output variables of the controllers)" is meet [sic] by Applicant's disclosed Admitted Prior Art.

Applicant respectfully disagrees. Although the Alleged APA may include a conversion device, nowhere does the Alleged APA disclose the feature of *a conversion device configured to superimpose, on the output variables of the controllers, an input control component that is a function of an actual value to calculate the correcting variables*, as provided for in the context of claims 21, 27, and 32. In this regard, the cited section of the Alleged APA in the Final Office Action at page 3 merely states that a conversion device has as input variables the output variables from the controllers, and the controllers merely receive control deviations as input variables. Thus, only control deviations are provided as input variables to the conversion device via controllers. However, nowhere does the Alleged APA even refer to an input control component that is a function of an actual value, much less an input control component that is provided to the conversion device. Accordingly, nowhere does the Alleged APA disclose, or even suggest, *a conversion device configured to superimpose, on the output variables of the controllers, an input control component that is a function of an actual value*.

Furthermore, the Advisory Action asserts that U.S. Patent No. 5,403,074 ("the '074 patent"), referred to at page 3, line 2 of the Specification, discloses the above-recited features of claims 21, 27, and 32. In this regard, the Advisory Action asserts that the output of controller 16 constitutes an input control component for subtractor 21, and that the output of controller 19 constitutes an input control component for adder 20. However, it is respectfully submitted that the outputs of controllers 16 and 19 of the '074 patent may merely constitute output variables of the controllers, as provided for in the context of the presently claimed subject matter. However, nowhere does the '074 patent describe a separate input control component *superimposed* on the output variables of the controllers. Accordingly, nowhere does the Alleged APA, or the '074 patent, disclose, or even suggest, *a conversion*

device configured to superimpose, on the output variables of the controllers, an input control component that is a function of an actual value.

Nonetheless, the Examiner's Answer at pages 22 to 25 maintains that the Alleged APA, or the '074 patent, disclose the above-recited features of claim 21. In this regard, the Examiner's Answer at page 22 states that "Appellant has not provided a clear definition of term 'superimpose' in the specification but has defined the term 'superimpose' ... in the use of 'offsetting.'" Appellant respectfully disagrees. For example, the specification at page 10, lines 29 to 31, and page 11, lines 21 to 24 states the following:

Output variables 30, 31 are offset against each other in conversion device 32. . . . ***[N]ot only are output variables 30, 31 of the two controllers 28, 29 offset against one another, but rather an input control component is additionally taken into consideration in conversion device 32.***

Further, the specification at page 13, lines 7 to 24 states the following:

According to a third aspect, at least one ***input control component is superimposed on output variables 30, 31 of controllers 28, 29 in conversion device 32. This input control component is a function of the modelling of controlled multivalue system 11.*** In the case of the input control components, characteristics maps of controller multivalue system 11 are involved, as the input variables for these characteristics maps the dynamically ascertained output variables 30, 31 of controllers 28, 29 and the ***measured corresponding actual values, so-called input control components***, being used.

Therefore, it is respectfully submitted that the specification clearly distinguishes between (a) offsetting of the output variables against one another and (b) an additional superimposing of an input control component on the output variables, which input control component is a function of the modelling of the controlled multivalue system. Moreover, the sections of the Alleged APA and the '074 patent cited at pages 23 and 24 of the Examiner's Answer merely describe offsetting output variables against one another by adder 20 and subtractor 21. Thus, although elements 20, 21 of the '074 patent may offset output variables against one another, nowhere does the '074 patent, describe a separate input control component superimposed on the output variables of the controllers. Accordingly, nowhere does the Alleged APA, or the '074 patent, disclose, or even suggest, *a conversion device configured to superimpose, on the output variables of the controllers, an input control component that is a function of an actual value.*

Therefore, the combination of Vos et al. and the Alleged APA does not disclose, or even suggest, the features of *a conversion device configured to superimpose, on the output variables of the controllers, an input control component that is a function of an actual value to calculate the correcting variables*, as provided for in the context of claims 21, 27, and 32.

Accordingly, the combination of Vos et al. and the Alleged APA does not disclose, or even suggest, all of the features included in claims 21, 27, and 32. As such, it is respectfully submitted that the combination of Vos et al. and the Alleged APA does not render unpatentable claims 21, 27, and 32.

As for claims 22 to 24, which ultimately depend from claim 21 and therefore include all of the features included in claim 21, and claims 28 and 29, which depend from claim 27 and therefore include all of the features included in claim 27, it is respectfully submitted that the combination of Vos et al. and the Alleged APA does not render unpatentable these dependent claims for at least the same reasons more fully set forth above.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

B. Rejection of Claims 25, 26, 30, and 31 Under 35 U.S.C. § 103(a)

Claims 25, 26, 30, and 31 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Vos et al., the Alleged APA, and Osder. It is respectfully submitted that the combination of Vos et al., the Alleged APA, and Osder does not render unpatentable the present claims for at least the following reasons.

Claims 25 and 26 ultimately depend from claim 21, and claims 30 and 31 ultimately depend from claim 27. As more fully set forth above, the combination of Vos et al. and the Alleged APA does not disclose, or even suggest, all of the features included in claims 21 and 27. Osder also does not disclose, or even suggest, all of the features included in claims 21 and 27, and thus, fails to cure this critical deficiency.

Accordingly, it is respectfully submitted that the combination of Vos et al., the Alleged APA, and Osder does not disclose, or even suggest, all of the features included in claims 21 and 27, from which claims 25, 26, 30, and 31 ultimately depend. As such, it is respectfully submitted that the combination of Vos et al., the Alleged APA, and Osder does not render unpatentable claims 25, 26, 30, and 31, which ultimately depend from claims 21 and 27.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

C. Rejection of Claim 33 Under 35 U.S.C. § 103(a)

Claim 33 was rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Vos et al., the Alleged APA, and Mikhail et al. It is respectfully submitted that the combination of Vos et al., the Alleged APA, and Mikhail et al. does not render unpatentable the present claim for at least the following reasons.

Claim 33 depends from claim 32. As more fully set forth above, the combination of Vos et al. and the Alleged APA does not disclose, or even suggest, all of the features included in claim 32. Mikhail et al. also does not disclose, or even suggest, all of the features included in claim 32, and thus, fails to cure this critical deficiency.

Accordingly, it is respectfully submitted that the combination of Vos et al., the Alleged APA, and Mikhail et al. does not disclose, or even suggest, all of the features included in claim 32, from which claim 33 depends. As such, it is respectfully submitted that the combination of Vos et al., the Alleged APA, and Mikhail et al. does not render unpatentable claim 33, which depends from claim 32.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

D. Rejection of Claims 34 to 36 Under 35 U.S.C. § 103(a)

Claims 34 to 36 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Vos et al., the Alleged APA, Mikhail et al., and Osder. It is respectfully submitted that the combination of Vos et al., the Alleged APA, Mikhail et al., and Osder does not render unpatentable the present claims for at least the following reasons.

Claims 34 to 36 ultimately depend from claim 32. As more fully set forth above, the combination of Vos et al. and the Alleged APA does not disclose, or even suggest, all of the features included in claim 32. Also, as more fully set forth above, Mikhail et al. and Osder also do not disclose, or even suggest, all of the features included in claim 32, and thus, fail to cure this critical deficiency.

Accordingly, it is respectfully submitted that the combination of Vos et al., the Alleged APA, Mikhail et al., and Osder does not disclose, or even suggest, all of the features included in claim 32, from which claims 34 to 36 ultimately depend. As such, it is respectfully submitted that the combination of Vos et al., the Alleged APA, Mikhail et al.,

and Osder does not render unpatentable claims 34 to 36, which ultimately depend from claim 32.

In view of all of the foregoing, reversal of this rejection is respectfully requested.

II. CONCLUSIONS

For at least the reasons indicated above and those set forth in the Appeal Brief, Appellant respectfully submits that the art of record does not disclose or suggest the subject matter as recited in the claims of the above-identified application. Accordingly, it is respectfully submitted that the subject matter as set forth in the claims of the present application is patentable.

In view of all of the foregoing, reversal of all outstanding rejections is therefore respectfully requested.

Respectfully submitted,

Dated: November 29, 2010

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